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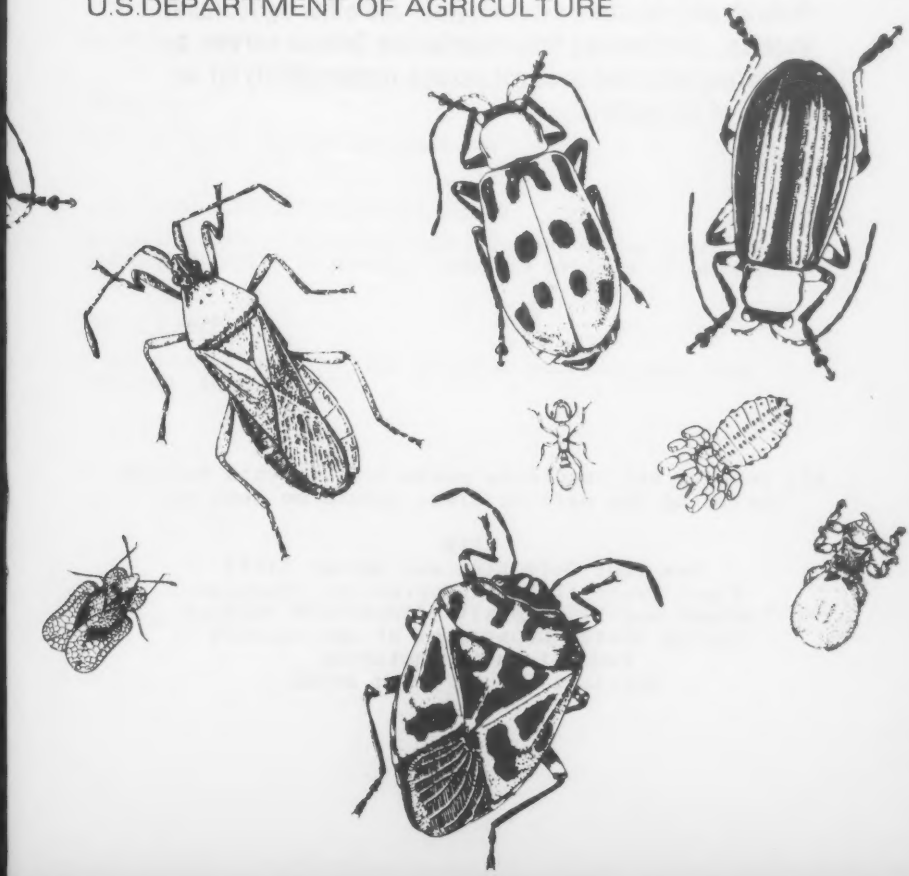

ANIMAL AND PLANT HEALTH INSPECTION SERVICE
PLANT PROTECTION AND QUARANTINE PROGRAMS
NEW PEST DETECTION AND SURVEY STAFF

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Service serves as a clearing house and does not assume responsibility for accuracy of the material.

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COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

GREENBUG economic on some wheat in California, Oklahoma, and Kansas. (p. 329).

WINTER GRAIN MITE at economic levels in Texas and Oklahoma. (p. 330).

A new APHID problem on alfalfa in California and Nevada. (p. 330).

ALFALFA WEEVIL heavy in Oklahoma, Illinois, and Virginia. (p. 331).

OAK LECANIUM heavy in Desha County, Arkansas, for third consecutive year. (p. 333).

GIANT AFRICAN SNAIL eradicated from continental U.S. (p. 335).

Detection

For new county records see page 336.

Some First Appearances of the Season

SUGARCANE BEETLE, COLORADO POTATO BEETLE, COWPEA APHID, and BLACK PECAN APHID in Alabama. AMERICAN DOG TICK in Delaware.

Special Report

A New Species of Tuckerella (Acarina: Tuckerellidae) from Thailand. (pp. 337-340).

Reports in this issue are for week ending April 18 unless otherwise indicated.

CONTENTS

Special Insects of Regional Significance.....329

Insects Affecting

Corn, Sorghum, Sugarcane...330
Small Grains.....330
Turf, Pastures, Rangeland..330
Forage Legumes.....330
Cotton.....332
Tobacco.....332
Potatoes, Tomatoes, Peppers.....332
Beans and Peas.....332
Cole Crops.....332
Deciduous Fruits and Nuts..332
Ornamentals.....333
Forest and Shade Trees.....333
Man and Animals.....334
Households and Structures..334

Beneficial Insects.....334

Federal and State Plant Protection Programs.....335

Hawaii Insect Report.....336

Detection.....336

Light Trap Collections.....336

A New Species of Tuckerella (Acarina: Tuckerellidae) From Thailand.....337

Weather of the Week.....341

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ARMY CUTWORM (Euxoa auxiliaris) - OKLAHOMA - Averaged 1-2 per 10 linear feet in most wheat checked in Harper, Ellis, western Woods, and Woodward Counties. (Okla. Coop. Sur.). KANSAS - Heaviest population noted at 0.3 per drill row foot in Grant County. (Bell).

ARMYWORM (Pseudaletia unipuncta) - KANSAS - First flights of season in Riley and Shawnee Counties. (Bell). MARYLAND - First flights of season in corn at Hebron, Wicomico County. Blacklight trap counts averaged less than one per night. (U. Md., Ent. Dept.).

GREENBUG (Schizaphis graminum) - CALIFORNIA - This species and Rhopalosiphum maidis (corn leaf aphid) economic on wheat and some barley in Imperial County; treatments required. (Cal. Coop. Rpt.). TEXAS - Light to moderate numbers of greenbug in isolated fields of barley and wheat in Pecos Valley area. Decreasing, 0-200 per foot of drill, due to parasitic wasp activity in Plainview, Hale County. (Neeb, Latham). OKLAHOMA - Up to 5,000 per linear foot of wheat in Texas County with heavy damage, even in irrigated fields. Range per linear foot by county: Beaver 30-250, Harper 8-160, Ellis 40-80, Woodward 4-80, Woods 0-12, Alfalfa 0-2. Many fields sprayed in Texas, Beaver, Harper, Ellis, and western Woodward Counties. Ranged 0-40 per linear foot in Washita and Custer Counties. Moderate in Dewey County. Spotted infestations still present in Comanche County. Ranged 0-7 per linear foot in Pawnee County. (Okla. Coop. Sur.).

KANSAS - Greenbugs heavy on some wheat in northwest and west-central areas of Haskell County, some treatments applied. Ranged 0-25 per drill row foot in seven randomly selected wheatfields in Haskell County. Ranged 0-50 per drill row foot in three Grant County wheatfields. (Bell). ARKANSAS - Light on wheat and oats in Arkansas, Desha, Lincoln, and Jefferson Counties. Heaviest population less than 100 in 100 sweeps. Parasitism ranged 25-30 percent. Predation light due to light lady beetle population. (Boyer).

SPOTTED ALFALFA APHID (Therioaphis maculata) - FLORIDA - Only 54 nymphs and adults collected in 100 sweeps of blooming alfalfa at Gainesville, Alachua County. (Mead). ARIZONA - Hippodamia convergens (convergent lady beetle) and Lysiphlebus testaceipes (a braconid wasp) now in control of alfalfa field 10 miles south of Safford, Graham County. T. maculata had yellowed the alfalfa. (Ariz. Coop. Sur.). Infestation reported in CEIR 25(16):316.

TOBACCO BUDWORM (Heliothis virescens) - FLORIDA - Problem on shade-grown tobacco the first week of April, about three weeks after transplanting at Quincy, Gadsden County. Problem involved about 10 percent of plants. Budworm now under control. Collected and determined by W.B. Tappan. (Fla. Coop. Sur.).

CORN, SORGHUM, SUGARCANE

SOUTHWESTERN CORN BORER (Diatraea grandiosella) - KENTUCKY - Larva taken from corn in Monroe County April 2. Collected and determined by D.E. Barnett. Identification confirmed by W.W. Gregory. This is a new county record. (Barnett).

SEEDCORN BEETLE (Agonoderus lecontei) - NEBRASKA - Large flights noted in Lancaster, Saline, and Clay Counties. (Keith, Gary).

SMALL GRAINS

ENGLISH GRAIN APHID (Macrosiphum avenae) - OKLAHOMA - Occasional alate noted on wheat in Alfalfa, Woods, and Beaver Counties. (Okla. Coop. Sur.). FLORIDA - Approximately 700 nymphs and adults in 100 sweeps of nearly ripe oats at Gainesville, Alachua County. (Mead). MARYLAND - Overwintering populations on Eastern Shore spotty and generally well below abnormally high 1974 levels. Light to moderate in one of six fields in Caroline, Queen Annes, Talbot, and Dorchester Counties. (U. Md., Ent. Dept.).

PALE WESTERN CUTWORM (Agrotis orthogonia) - KANSAS - Significant infestations of small larvae on wheat in Stanton and Morton Counties. Ranged 0.3-1.6 per drill row foot in Stanton County and 2.0-3.6 in Morton County. (Bell).

WINTER GRAIN MITE (Penthaleus major) - TEXAS - Economic levels, 300-400 per foot of drill, in a few fields in Hale County. Rains greatly reduced pest. (Latham). OKLAHOMA - Light to heavy, up to 500 per linear foot, on wheat in Washita and Custer Counties and 0-2 per linear foot in Alfalfa and Woods Counties. (Okla. Coop. Sur.).

TURF, PASTURES, RANGELAND

SUGARCANE BEETLE (Euetheola rugiceps) - ALABAMA - First emergence of season noted from grass and clover sod along highways near Dothan, Houston County. (Stephenson).

FORAGE LEGUMES

AN APHID (Acrythosiphon sp.) - CALIFORNIA - Believing this aphid to be a different species from pea aphid (Acyrthosiphon pisum), aphid taxonomists are studying it and will provide a species name. Specimens do not have typical pea aphid characters. Suggested chemicals for pea aphid do not give adequate control. Infested alfalfa has more than the usual honeydew and exhibits stunting and yellowing resulting from aphid toxins. Undoubtedly this aphid had occurred in mixed populations with pea aphid for some-time and had spread unnoticed. Presence in somewhat epidemic form now probably due to chemical control removing pea aphid and leaving this new aphid behind to multiply. Recorded from Imperial, Riverside, San Bernardino, San Joaquin, and Siskiyou Counties. (Cal. Coop. Rpt., Apr. 11). NEVADA - Unusually heavy on alfalfa hay and seed in 1974. Evident to date in Clark and Nye Counties. (Nev. Coop. Rpt.).

PEA APHID (Acyrthosiphon pisum) - NEW MEXICO - As high as 100-300 per 25 sweeps of alfalfa near Artesia, Eddy County. (N.M. Coop. Rpt.). TEXAS - Light to heavy on alfalfa in Ward County. Light in Pecos and Midland Counties. Heavy, 150+ per sweep, in some fields in Hale County. (Neeb, Latham). OKLAHOMA - Averages per square foot by county: Alfalfa 10, Woods 12, Harper 350, and Ellis 65. Moderate in Texas County. Light in Garvin County. (Okla. Coop. Sur.). ARKANSAS - Seldom more than 100 aphids per 100 sweeps in all areas. (Boyer). FLORIDA - About 2,200 nymphs and adults in 100 sweeps of blooming alfalfa at Gainesville, Alachua County. (Mead).

MEADOW SPITTLEBUG (Philaenus spumarius) - ILLINOIS - First nymphs of season in Washington County, averaging less than one per 100 stems. (Ill. Ins. Rpt.).

ALFALFA WEEVIL (Hypera postica) - TEXAS - Larvae ranged up to 200 per 20 sweeps in Plainview, Hale County. First pupae observed there. Larvae per 100 sweeps by county: Ward 20-30, Pecos 120-300, Midland 30-50, and Martin 40-80. (Latham, Neeb). OKLAHOMA - Heavy on alfalfa in Comanche and Pontotoc Counties, moderate to heavy in Garvin County, moderate in Cleveland and Kay Counties, and light to moderate in Woodward County. Tip infestations averaged by county: Alfalfa 75 percent (1-7 larvae per tip), Woods 72 percent (1-6 per tip), Harper 32 percent (1-2 per tip), and Ellis 56 percent (1-4 per tip). Larvae ranged 200-300 per linear foot in Washita and Custer Counties. Populations increasing in Texas County. (Okla. Coop. Sur.).

KANSAS - Treatments to alfalfa applied for alfalfa weevil in southeast district. Adults averaged per 10 sweeps by county: Sumner 2, Kingman 1, and Harper 0.5. (Bell). NEBRASKA - Eggs noted on 30 percent of alfalfa stubble in field near Mean, Saunders County. (Manglitz). One egg mass per square foot of stubble in field near Roca, Lancaster County, April 11. (Miller).

MISSOURI - Alfalfa weevil hatched in central, northeast, and north-central areas. Larvae per stem by county: Boone 0.5, St. Charles 1.05, Macon 0.5, Shelby 0.6. (Munson). MICHIGAN - Adults flying in Berrien County on March 28. First adults found in emergence cages in Ingham County on April 16; emergence retarded by cold, snowy spell. (Wellso et al.). ILLINOIS - Tip feeding reached 90 percent in southern fields; up to 4.5 larvae per tip. Some fields require spraying; alfalfa 4 to 8 inches tall. (Ill. Ins. Rpt.). INDIANA - Infestation averaged 62 percent in two alfalfa fields in Daviess County. Larvae, 81-85 percent first instars, up to 4.7 per stem. Spring eggs averaged 15.75 per mass in nine of 43 dissected stems. (Morihara, Meyer).

TENNESSEE - Alfalfa weevil larvae (and number of tips infested) per 50 alfalfa tips by county: Chester 36 (0), Lake 25 (25), Monroe 27 (21), and Tipton 17(10). (Cagle). VIRGINIA - Based on 13 fields sampled (157 acres), 41.8 percent of tips infested. Defoliation averaged 4.9 percent. Specimens large enough to cause serious damage. Economic threshold exceeded in 31 percent of fields and 25 percent of acreage. (Allen). MARYLAND - First larvae of season taken week ending April 11 in Queen Annes and Dorchester Counties. Averaged less than one larva per 150 tips. Currently,

alfalfa weevil larval activity increased very slowly in Frederick, Howard, and Washington Counties due to cool weather. Heaviest larval populations ranged 4-10 per 100 alfalfa tips in widely scattered fields. (U. Md., Ent. Dept.).

GREEN CLOVERWORM (Plathypena scabra) - ARKANSAS - Reproduction underway in legumes in western and southeast areas as evidenced by half-grown larvae. (Boyer).

COTTON

BOLLWORM (Heliothis zea) - NEW MEXICO - First moth of season (a female) taken from light trap, Dona Ana County, on April 17. (N.M. Coop. Rpt.).

TOBACCO

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - FLORIDA - Infestations on sun-grown wrapper tobacco peaked April 7. Damaged 16 percent of plants in fields totaling 30 acres at Quincy, Gadsden County. Collected and determined by W.B. Tappan. (Fla. Coop. Sur.).

POTATOES, TOMATOES, PEPPERS

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - ALABAMA - First reports of season. Damaged commercial tomato planting in Houston County. Oviposition and young larvae noted; treatments applied. Adults observed in Autauga County gardens. (Smith, Wyatt).

GREEN PEACH APHID (Myzus persicae) - CALIFORNIA - Heavier than usual on young tomato seedlings in Imperial County. Treatments difficult and repeated on some fields. (Cal. Coop. Rpt.).

BEANS AND PEAS

COWPEA APHID (Aphis craccivora) - ALABAMA - First report of season. Infested southern garden peas in garden at Linden, Marengo County. (Yates).

COLE CROPS

YELLOWMARGINED LEAF BEETLE (Microtheca ochroloma) - FLORIDA - Past peak; was heavy on turnips at Gainesville, Alachua County, during late March and early April. Collected on April 17. Collected and determined by R.I. Sailer. Common on Nasturtium officianale (watercress) in low area at Gainesville. Collected by D.H. Habeck, April 17. Determined by R.E. Woodruff. This is a new county record. (Fla. Coop. Sur.).

DECIDUOUS FRUITS AND NUTS

EASTERN TENT CATERPILLAR (Malacosoma americanum) - ALABAMA - Broods active in cherry trees in Lawrence, Limestone, and Morgan Counties. Maturing larvae noted in Montgomery and Autauga Counties. Numerous trees defoliated in Talladega and Calhoun Counties. (Cain et al.). MISSOURI - Light on peaches in Howell County. (Munson). OKLAHOMA - Larvae active and heavy on wild plum in Beaver County. Moderate to heavy in Wagoner County and light on fruit trees in Muskogee County. (Okla. Coop. Sur.).

APPLE APHID (Aphis pomi) - PENNSYLVANIA - Overwintered eggs hatched at Biglerville and Arendtsville, Adams County. (Hull).

BLACK PECAN APHID (Tinocallis caryaefoliae) - ALABAMA - First report of season. Adults ranged 1-2 on leaves of each branch on seedling pecan trees in small home orchard in Russell County. (Bice et al.).

SAN JOSE SCALE (Quadraspidiotus perniciosus) - ALABAMA - Heavily infested peach trees in home orchard at Auburn, Lee County. (McQueen).

ORNAMENTALS

EASTERN TENT CATERPILLAR (Malacosoma americanum) - MARYLAND - First larvae of season collected on wild cherry near Salisbury, Wicomico County, April 11. First and second-instar larvae currently active on ornamentals east of Frederick County. Tents ranged 3-5 inches in Prince Georges and Charles Counties. (U. Md., Ent. Dept.). TEXAS - Observed on many ornamental trees throughout south-central area. (Cole).

NANTUCKET PINE TIP MOTH (Rhyacionia frustrana) - MISSOURI - Larval infestation in ornamental scotch pine planting in south-central area. (Munson).

OAK LECANIUM (Lecanium quercifex) - ARKANSAS - Very heavy on willow oak at McGehee, Desha County. This is about third consecutive year of heavy infestation. (Boyer).

WESTERN BOXELDER BUG (Leptocoris rubrolineatus) - OREGON - Overwintered adults emerged in south area. Many noted on wide variety of ornamentals at Roseburg, Douglas County, April 17. Mating pairs evident and some adults feeding on new growth of ornamental varieties of Acer. (Penrose).

ARMORED SCALES - FLORIDA - Velataspis dentata and Palinaspis quohogiformis adults infested stems and bark of Callicarpa americana (French mulberry) examined at Brighton, Highlands County, March 26. Collected by J.C. Denmark and Q.N. Baker. Determined by G.W. Dekle. These are new county and host records. (Fla. Coop. Sur.).

NATIVE HOLLY LEAFMINER (Phytomyza ilicicola) - MARYLAND - Most larvae pupated in Prince Georges, Montgomery, Anne Arundel, and Howard Counties. Infested 90-95 percent of leaves on American holly trees. Adults expected next 7-10 days. (U. Md., Ent. Dept.).

FOREST AND SHADE TREES

FOREST TENT CATERPILLAR (Malacosoma disstria) - TEXAS - Infested oaks from Harris to Travis Counties and west to Wilson County. (Cole).

EASTERN TENT CATERPILLAR (Malacosoma americana) - KANSAS - Hatch reported on wild plum trees in Riley County. (Bell). TENNESSEE - Tents and feeding becoming more evident in shade trees in all areas of the State. (Greene).

ELM LEAF BEETLE (Pyrrhalta luteola) - CALIFORNIA - Overwintering adults becoming heavier in municipal areas. Population last season, heaviest of many years, resulted in extreme tree defoliation. Systemic treatment begun although season about three weeks later than normal and elm trees just breaking dormancy. Biological control unsuccessful in 1974 and chemical treatments very poor in many areas. (Cal. Coop. Rpt.).

A MARGARODID SCALE (Matsucoccus acalyptus) - NEW MEXICO - Heavy in northwestern Santa Fe, Santa Fe County, causing continued concern to homeowners. (N.M. Coop. Rpt.).

MAN AND ANIMALS

SCREWWORM (Cochliomyia hominivorax) - Total of 12 cases reported from continental U.S. during period April 6-12, all from Texas. Cumulative total since January 1, 1975, to date is 55 cases; in 1974 total at same time was 151 cases. Total of 92 cases confirmed from Mexico. Number of sterile flies released in U.S. this period totaled 52,296,000, all released in Texas. Total of 90,414,000 sterile flies released in Mexico. (Vet. Serv.).

HORN FLY (Haematobia irritans) - MISSISSIPPI - Adults averaged 50+ per head on 25 Charolais cattle in Oktibbeha County. (Robinson). OKLAHOMA - Averaged 350 per head on cattle checked in Noble County and 200 per head in Payne County. (Okla. Coop. Sur.). TEXAS - Light to moderate on cattle in Pecos, Terrell, Brewster, Upton, Glasscock, and Ward Counties. Increase noted in Calhoun County area. (Neeb, Cole).

FACE FLY (Musca autumnalis) - MISSOURI - Averaged 15 per head in herd of yearling Herefords in Boone County. (Brown).

SHORTNOSED CATTLE LOUSE (Haematopinus eurysternus) - OKLAHOMA - Heavy populations continue on cattle in Pontotoc County. (Okla. Coop. Sur.).

LONE STAR TICK (Amblyomma americanum) - OKLAHOMA - Heavy on Wagoner County beef cattle. (Okla. Coop. Sur.).

AMERICAN DOG TICK (Dermacentor variabilis) - DELAWARE - First of season noted in New Castle County. (Burbutis).

HOUSEHOLDS AND STRUCTURES

EASTERN SUBTERRANEAN TERMITE (Reticulitermes flavipes) - ALABAMA - Numerous alate broods noted swarming from buildings and stumps in yards at Auburn, Lee County. (Faw et al.).

BENEFICIAL INSECTS

CONVERGENT LADY BEETLE (Hippodamia convergens) - OKLAHOMA - Adults and larvae common in wheatfields with moderate to heavy Schizaphis graminum (greenbug) infestations in Ellis, Harper, and Beaver Counties. Larvae ranged 1-6 per linear foot. Lighter, up to one per linear foot, in Alfalfa, Woods, and Woodward Counties. Adults heavy in wheat and alfalfa in Comanche County and light to moderate

in alfalfa in Washita and Custer Counties. (Okla. Coop. Sur.). NEW MEXICO - Adults of Hippodamia convergens ranged 3-5 per 25 sweeps of alfalfa near Artesia, Eddy County. Cool weather and winds appear to adversely affect beneficial insects on alfalfa at this time. (N.M. Coop. Rpt.).

AN ICHNEUMONID WASP (Bathyplectes curculionis) - OKLAHOMA - Eggs and larvae dissected from Hypera postica (alfalfa weevil) larvae for the first time this year. Collected from Harmon, Jackson, and Carter Counties April 11, Stephens and Payne Counties April 14, and Pottawatomie County April 16. Parasitism averaged 15 percent in Pottawatomie County and ranged 1-3 percent in other counties. Harmon is a new county record for B. curculionis. Collected and determined by R. Berberet. (Okla. Coop. Sur.).

A BRACONID WASP (Lysiphlebus testaceipes) - OKLAHOMA - Parasitism of Schizaphis graminum (greenbug) in wheat ranged light to heavy in Ellis County, none to light in Beaver County, and averaged light in Woods, Harper, and Woodward Counties. Parasitism heavy in Washita and Custer Counties. (Okla. Coop. Sur.).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

RED IMPORTED FIRE ANT (Solenopsis invicta) - ARKANSAS - Adults collected from 5 mounds on farm November 11, 1974, in Drew County. Collected by E.L. Young. Determined by D.R. Smith. This is a new county record. (PPQ).

CEREAL LEAF BEETLE (Oulema melanopus) - MICHIGAN - First eggs collected April 14 at Niles, Berrien County, on native grasses. (Wellso, Burger).

GIANT AFRICAN SNAIL (Achatina fulica) - FLORIDA - Has been declared eradicated from the continental United States as of April 13. No specimens have been found in the Miami-Hollywood, Florida area following two years of treatment and survey. It has been six years since the original pair of giant African snails were brought from Hawaii by a visiting child and released in his grandmother's backyard. (Darling).

General Vegetables - BEET ARMYWORM (Spodoptera exigua) infestations in green onions moderate (25-30 percent of plants infested) at Koko Head, Oahu. Damage especially heavy in certain portions of plantings.

Fruits and Ornamentals - Surveys for ORANGE SPINY WHITEFLY (Aleurocanthus spiniferus) on Maui during March 1975 negative. To date, this species still confined to Oahu where its spread has been slow. Biological control established and exerting good control at many sites. (Miyahira, Murai). BANANA SKIPPER (Erionota thrax) populations on Oahu still under excellent control. Slight population increases noted at Pearl City and Honouliuli, Oahu. Activity reported stable throughout March on Kauai; foliar damage ranged 12-15 percent. Parasites established at several locations and are being monitored. E. thrax populations on Maui increased significantly. No infestations reported from east Maui. Apanteles erionotae, a larval parasite, is firmly established but no egg parasite recovered to date. A new banana skipper infestation was detected at Kamolo, Molokai. Infestations continued to increase on Hawaii Island and have now been found as far north as Hakalau; parasites have been released. (Sugawa et al.).

DETECTION

New County Records - ARMORED SCALES (Velataspis dentata, Palinaspis quohogiformis) FLORIDA - Highlands (p. 333). AN ICHNEUMONID WASP (Bathyplectes curculionis) OKLAHOMA - Harmon (p. 335). RED IMPORTED FIRE ANT (Solenopsis invicta) ARKANSAS - Drew (p. 335). SOUTHWESTERN CORN BORER (Diatraea grandiosella) KENTUCKY - Monroe (p. 330). YELLOWMARGINED LEAF BEETLE (Microtheca ochroloma) FLORIDA - Alachua (p. 332).

LIGHT TRAP COLLECTIONS

ARIZONA - Mesa, 4/7-13, BL, ARMY CUTWORM (Euxoa auxiliaris) 22, BEET ARMYWORM (Spodoptera exigua) 3, BLACK CUTWORM (Agrotis ipsilon) 7, VARIEGATED CUTWORM (Peridroma saucia) 35, YELLOW-STRIPED ARMYWORM (S. ornithogalli) 2. FLORIDA - Gainesville, 4/11-17, BL, beet armyworm 3, black cutworm 2, CABBAGE LOOPER (Trichoplusia ni) 3, FALL ARMYWORM (S. frugiperda) 2. GRANULATE CUTWORM (Feltia subterranea) 49, yellowstriped armyworm 1. KANSAS - Manhattan, 4/16, BL, ARMYWORM (Pseudaletia unipuncta) 12, black cutworm 6, variegated cutworm 21. KENTUCKY - Grant County, 4/9-15, BL, armyworm 3, black cutworm 1, variegated cutworm 1. Madison County, 4/4-15, BL, armyworm 2. Morgan County, 4/11, BL, armyworm 8. MISSISSIPPI - Stoneville, 4/11-17, temp. 39-76 degrees F., precip. 1.68 in., 2BL, armyworm 161, black cutworm 52, BOLLWORM (Heliothis zea) 2, SALTMARSH CATERPILLER (Estigmene acrea) 1, variegated cutworm 24, yellowstriped armyworm 1. NEW MEXICO - Las Cruces, 4/5-11, BL, armyworm 24, beet armyworm 6, black cutworm 4, variegated cutworm 16, yellowstriped armyworm 1. TENNESSEE - Hardeman County, 4/12-18, BL, armyworm 10, black cutworm 2, bollworm 1, cabbage looper 3, variegated cutworm 11. Madison County, 4/12-18, BL, armyworm 41, black cutworm 10, granulate cutworm 1, variegated cutworm 8, cabbage looper 1.

A New Species of Tuckerella (Acarina: Tuckerellidae) From Thailand

Edward W. Baker 1/ and Donald M. Tuttle 2/

Abstract: A description of an undescribed species of Tuckerellidae, Tuckerella knorri, is given for specimens collected feeding on Pandanus and Achras zapota in Thailand.

The family Tuckerellidae was established by Baker and Pritchard (1953) to include two species of the genus Tuckerella Womersley (1940), T. ornata (Tucker) (1926) and T. pavoniformis (Ewing) (1922). Since then the following species have been described -- T. sphechtae Womersley (1957), T. flabellifera Miller (1964), T. coleogynis Jorgensen (1967), T. nilotica Zaher and Rasmy (1969), T. littoralis Collyer (1969), T. equalis Chaudri (1971), T. ablutus Chaudri (1971), T. saetula Chaudri (1971), T. murriensis Chaudri (1971), T. elegans Rossi de Simons (1972), and T. indica Prasad (1973). Miller (1964) described both female and male, while Prasad (1973) described only the male; these are the only males known. We have been fortunate in receiving a series of Tuckerella females from Dr. L.C. Knorr from Thailand which appears to represent another species in this genus. All stages are represented. There appear to be three rather than two nymphal stages, although there is some variation in the number of anal-genital setae. This new species is close to Prasad's T. indica. Our female differs from his male in that the proximal solenidion of tarsus I is much shorter than the distal solenidion; the reticulate pattern of the hysterosoma appears to be much more irregular; and the anterior pair of propodosomal setae are scalloped rather than striate.

Tuckerella knorri, n. sp. (Figs. 1-7)

Female. With six pairs of long, posterior whiplike setae serrate to about the distal one-third; with two pairs of short, broadly spatulate, serrate setae. Posterior hysterosomal row of setae subequal in length and in transverse row; other dorsal body setae progressively larger anteriorly; marginal setae of hysterosoma longer than broad and sides roughly parallel (figs. 2, 3). Reticulate pattern of hysterosoma very irregular, the pattern on posterior transverse; the pattern of propodosoma almost regularly polygonal; striae visible; anterior pair of propodosomal setae elongate and with reticulate or scalloped pattern. Genital-anal area as figured in Baker and Pritchard (1953).

Male. Not known.

Immatures. Immatures with dorsal palmate setae and reticulate pattern similar to female; with fewer palmate leg setae. Larvae with one long and two short anal setae; with three pairs of short, broadly spatulate, serrate setae and three pairs of long whiplike setae and one pair of short whiplike setae on posterior (fig. 4).

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Nymph I (fig. 5) with a single pair of preanal setae and three pairs of anal setae; posterior margin of body with four pairs of short, serrate, spatulate setae, the outer pair not broadened. Nymph II (fig. 6) with a pair of preanal setae and a pair of adanal setae, and four pairs of anal setae; there are four pairs of long posterior whiplike setae and four pairs of short, broadly palmate, serrate setae, the outer and inner pairs small. What may be nymph III (fig. 7) (not known in the Tetranychidae and Tenuipalpidae) possesses two pairs of preanal setae, a pair of para-anal setae, and 3-4 pairs of anal setae (the number is variable within the specimens); the posterior marginal setae are similar to those of the female except that the two paris of outer setae are much larger than the inner pair.

Holotype. Female, USNM No. 3652, ex Pandanus odoratissmus L. roots, Bangkok, Thailand, including rostrum 414 μ.

The mite is named in honor of Dr. L.C. Knorr who has contributed much to our knowledge of citrus mites and diseases throughout the world.

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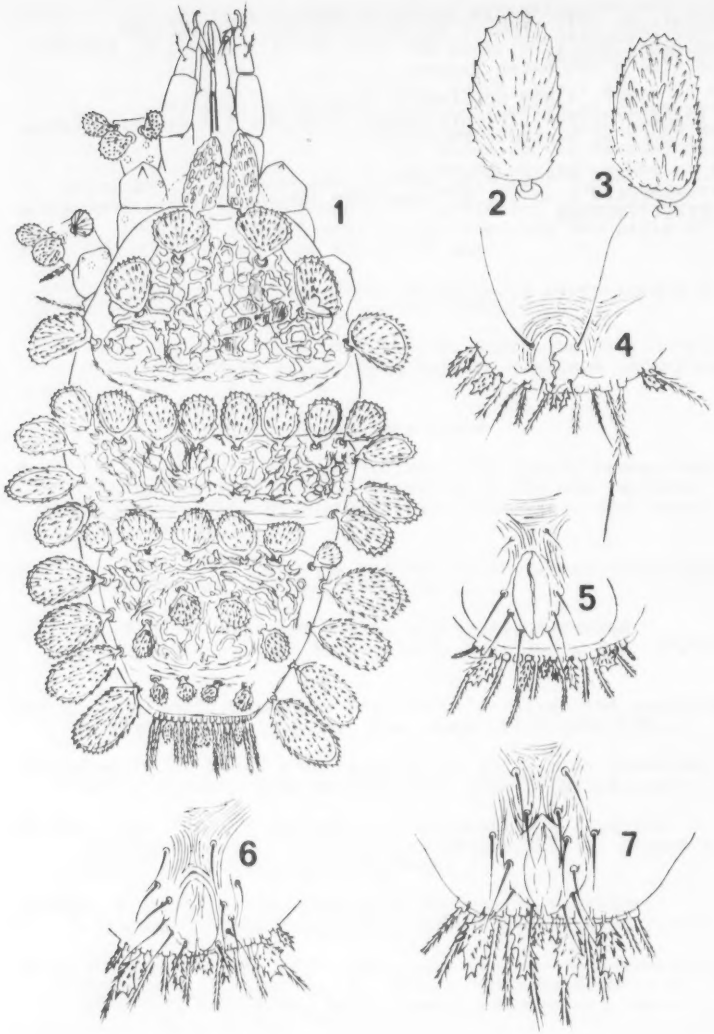

Figs. 1-7. Tuckerella knorri, new species. 1, dorsal view of female. 2, ventral view of marginal hysterosomal seta. 3, dorsal view of same seta. 4, anal region of larva. 5, anal region of nymph I. 6, anal region of nymph II. 7, anal region of nymph III.

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WEATHER OF THE WEEK ENDING APRIL 21

Reprinted from Weekly Weather and Crop Bulletin supplied by National Weather Service, NOAA.

HIGHLIGHTS: Most of the Nation was still averaging below normal temperature. The south-central Plains began to warm in the early and latter part of the week and averaged slightly above normal. Heavy rain fell on the already flooded gulf coast early in the week and later in the vicinity of southern Lake Michigan.

PRECIPITATION: On Monday, a front moved slowly through the South causing heavy rain and thunderstorms from Louisiana to South Carolina. Flooding increased on the already swollen rivers in southern Alabama and Georgia. At least four tornadoes touched down in northwestern Florida. Warm air flowed northward from the Gulf of Mexico and spread rain to the eastern Dakotas. Showers of rain or snow fell in the Great Basin and northern Rockies. Tuesday saw snow in the Southwest and thunderstorms in the Southeast. Locally, heavy snow fell in the mountains of central and southern California early in the day. Rain and showers dampened the Pacific Northwest. The frontal wave in the South developed into a Low center and deepened as it moved off the east coast near Cape Hatteras. Heavy rain and thunderstorms continued around the Low as it moved northeastward. The northward flow into the Plains continued to warm southern and central portions and caused light rain and drizzle in Minnesota and Nebraska. Occasional snow was reported in northern California and southern Oregon and eastward to Montana and Wyoming. Wednesday brought clear skies to the South. The deepening Low in the Atlantic off the New Jersey coast brought cold winds to northeastern coastal areas. A deepening Low on the Kansas-Missouri border caused rain in the northern Plains and showers in the eastern Rockies. A weather system off the west coast spread cool showers southward into southern California on Thursday. Later in the day, weather activity increased from the central Plains northward as Low centers were located in Iowa and southeast Colorado. A warm front extended from the Low in Iowa southeastward to North Carolina; a cold front southwestward to the Colorado Low and south. As the warm moist air from the gulf moved northward, rain was triggered in southeast Texas and as the warm air met the cooler air at the warm front, occasional rain fell to the north. Some isolated thunderstorms began to form north of the western portion of the warm front. Precipitation in the form of rain or snow fell from Wisconsin to Montana, Wyoming, Utah, and Colorado. By Friday, Lows were in northern Michigan and eastern Kansas. The cold front, bounding the incoming cold air, extended between the Lows and into west Texas; the warm front through western Pennsylvania to southern Virginia and eastward. Thunderstorms occurred in Iowa, Illinois, Indiana, and Michigan and southward all along the front. Heavy rain fell in these areas and caused local flooding. Snow showers were reported all along the east slopes of the Rockies from Kansas northward. By the end of the day, thundershowers had formed along the front as it moved eastward into Louisiana and Mississippi. At least twelve tornadoes were reported; most in the mid-section of the Mississippi Valley. The most destructive twister hit Jackson, Tennessee, and caused

one death and many injuries. Thunderstorms continued to rumble on Saturday morning but abated somewhat later in the day. The Low center moved into southern Canada and continued to deepen causing strong winds and snow showers in the northern Plains and eastward as the cold air plunged southward into the States. Thunderstorms formed along and ahead of the front from Pennsylvania to Tennessee as it moved eastward. Rain fell throughout Washington and Oregon as a new storm moved inland. On Sunday, the front moved into the Atlantic and through central Florida and into the gulf. Rain and occasional thunderstorms occurred on the southeast coast behind the front. Elsewhere, the Pacific front moved to the central Rockies and snow showers fell all along the front. By end of the day, a warm southerly flow was again entering the southern Plains and thunderstorms formed from north-central Kansas to southwest Missouri.

TEMPERATURE: Warm air was moving into the central Plains again on Monday as cold air enveloped both the East and the West. A record low of 22 degrees at Atlantic City, New Jersey, was the lowest since 1950 when 29 degrees was recorded. The warming in the Plains continued until Thursday when the cold air flowing southward into the Rockies began moving eastward behind a cold front that extended from Lake Michigan to west Texas. Mid-afternoon temperatures ranged from 28 degrees at Butte, Montana, to 97 degrees a record at Midland, Texas, just ahead of the front. The cold air continued pouring into the eastern Rockies on Saturday as the leading edge of the cold air moved eastward. By Sunday, the cold air had enveloped all of the East and some warming had returned to the central Plains, more cold air began to move southward into the Rockies from Canada.

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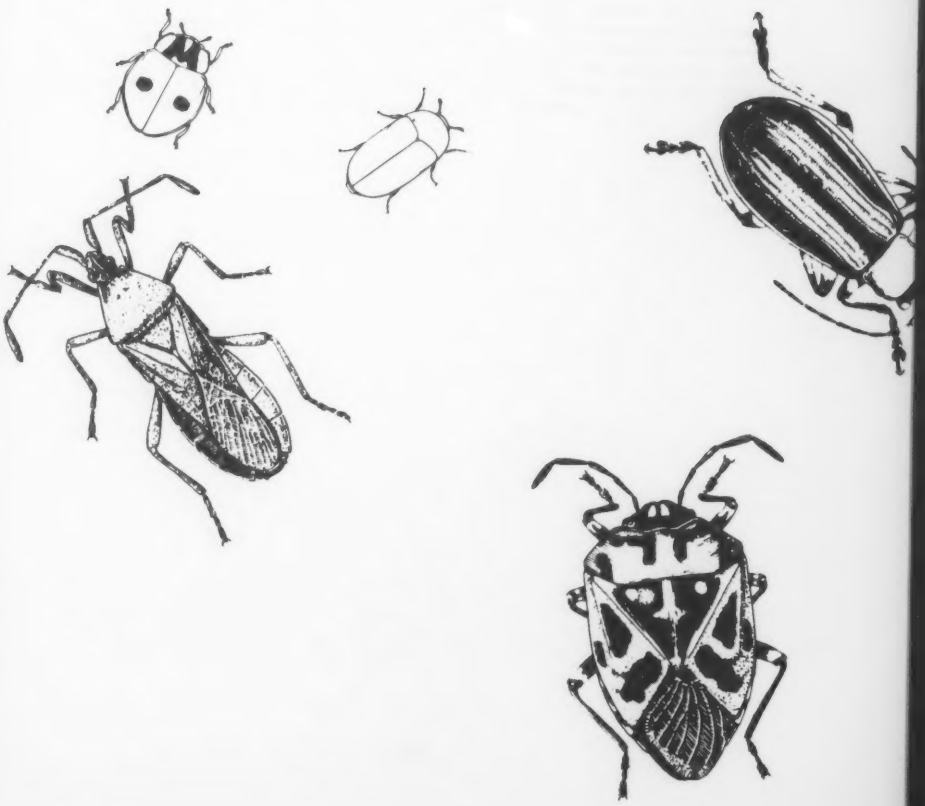
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